



NPS Mississippi River Forum



Where Does *it* Go When I Flush

July 25, 2014

➤ St. Cloud Wastewater Treatment

Collection System

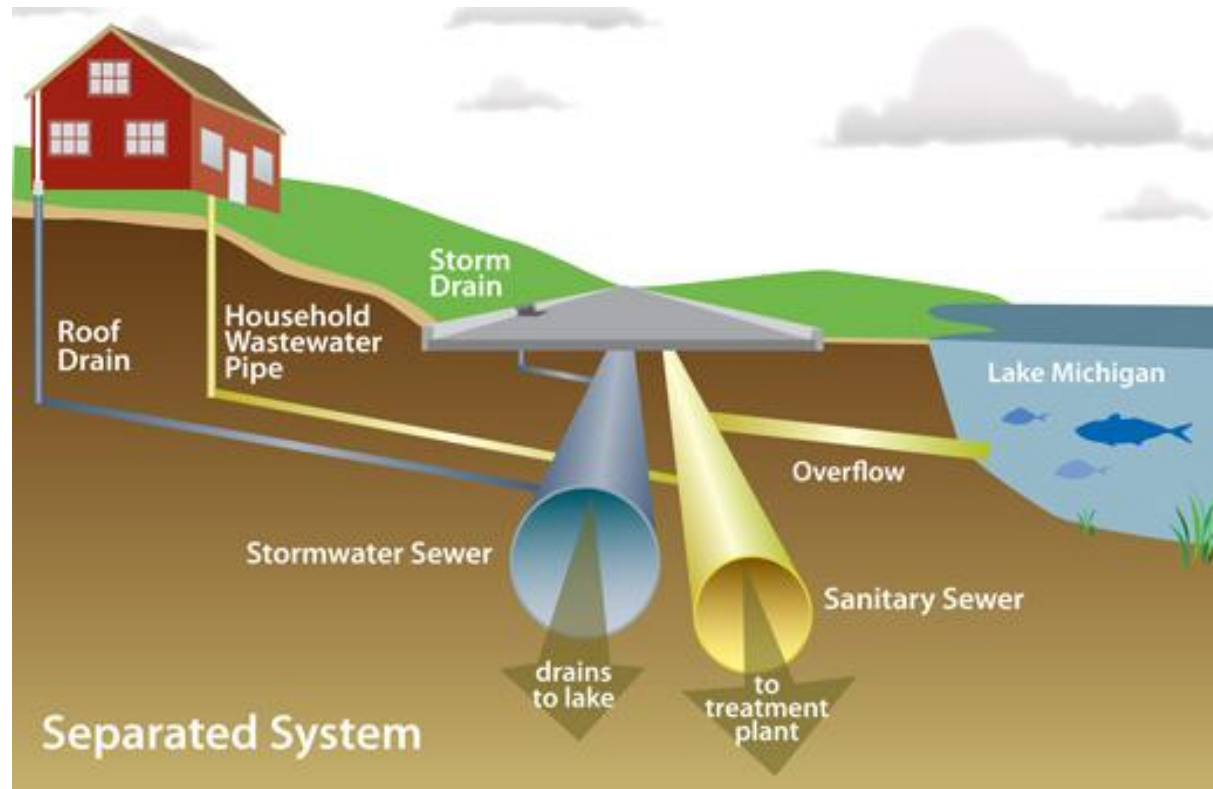


Image from www.villageofshorewood.org

St. Cloud Wastewater Treatment

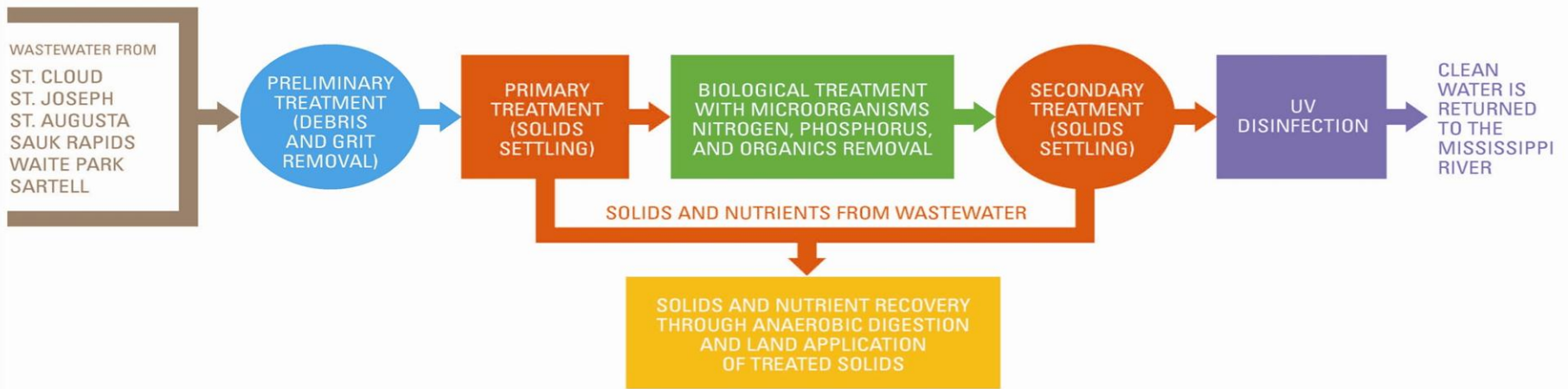
Key Facts

- Design Flow – 17.9 MGD & Average – 10.5 MGD
- Population served ~ 110,000; serves 6 cities
- Staffed 24/7 with 18FTE
- Meets and exceeds NPDES limits and requirements

St. Cloud Wastewater Treatment

Process Overview

Wastewater Treatment Process – Protecting Our Waterways



St. Cloud Wastewater Treatment

Preliminary and Primary Treatment

- Bar Screen
- Grit Removal
- Primary Tanks



St. Cloud Wastewater Treatment

Secondary Treatment



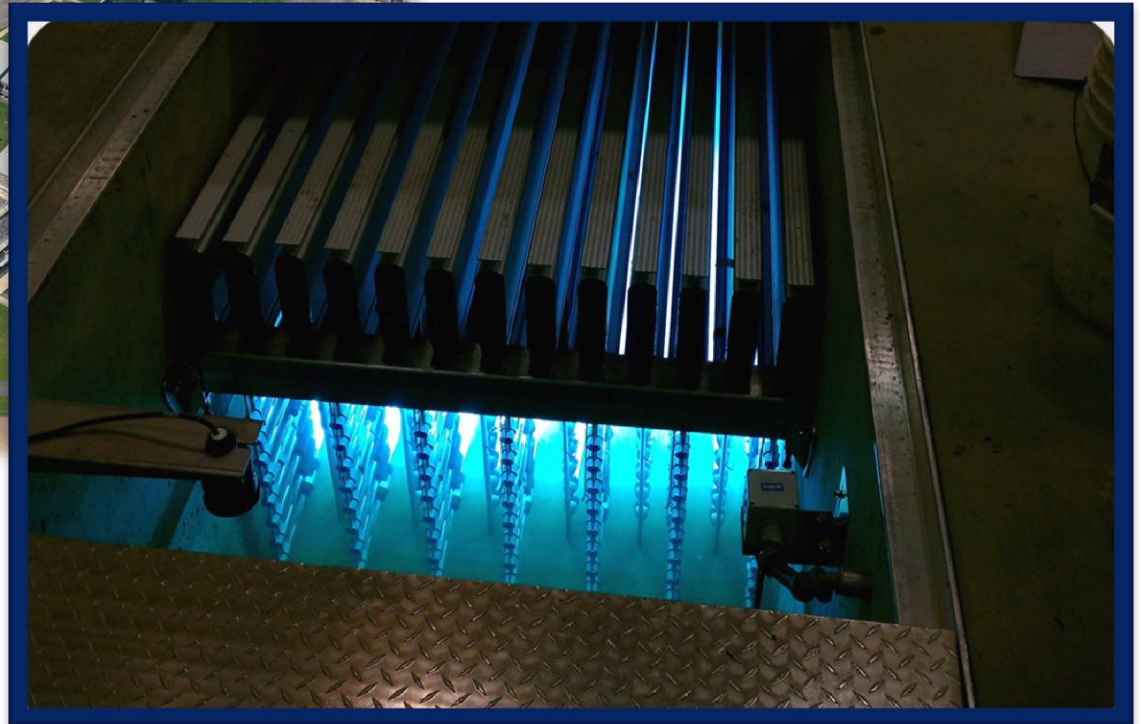
St. Cloud Wastewater Treatment

Final Clarification



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Disinfection



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Biosolids Management

CITY OF
ST.CLOUD ➤ BIOSOLIDS PROGRAM
MINNESOTA



BIOSOLIDS
MANAGEMENT PROGRAM

Recycling Today | **GREATER** Tomorrow

Providing a highly valued agricultural product that is produced in a professional, cost-effective, and sustainable manner.





St. Cloud Wastewater Treatment

Rehabilitation, Upgrade and Expansion Project (2010-2013)



St Cloud Wastewater Treatment

Project Results

| | Upgraded Prevented from being discharged to the river annually (tons) | Previous Prevented from being discharged to the river annually (tons) | Difference (improvement)  = 5 tons |
|-------------------|--|--|---|
| Solids | 2889 | 2819 |  |
| Nitrogen | 58 | 26 |  |
| Phosphorus | 69 | 39 |  |

St. Cloud Wastewater Treatment

Project Results

ANNUALLY

Weight of Solids Entering the
Wastewater Treatment Facility per Year



Weight of Solids That Enter the
Mississippi River per Year

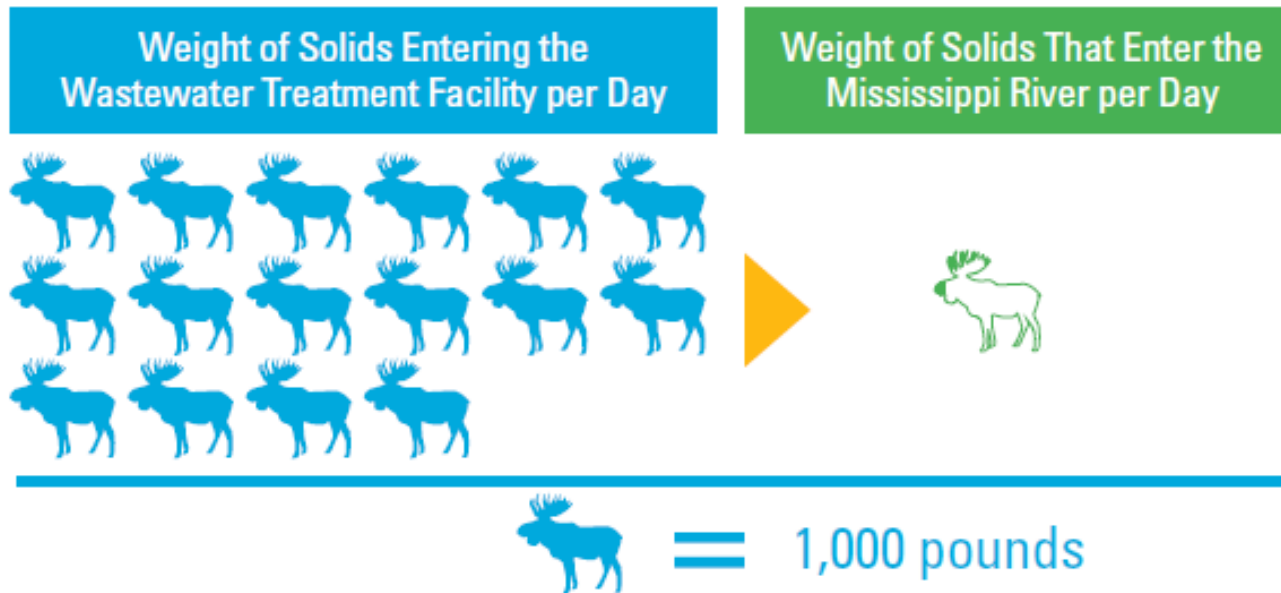


200 tons

St. Cloud Wastewater Treatment

Project Results

DAILY



St. Cloud Wastewater Treatment

Exciting Future

- › Paradigm Shift from Wastewater Treatment to Resource Recovery
- › Energy Consumer to Energy Provider



St. Cloud Wastewater Treatment

Nutrient Recovery



Graphic from Ostara's website

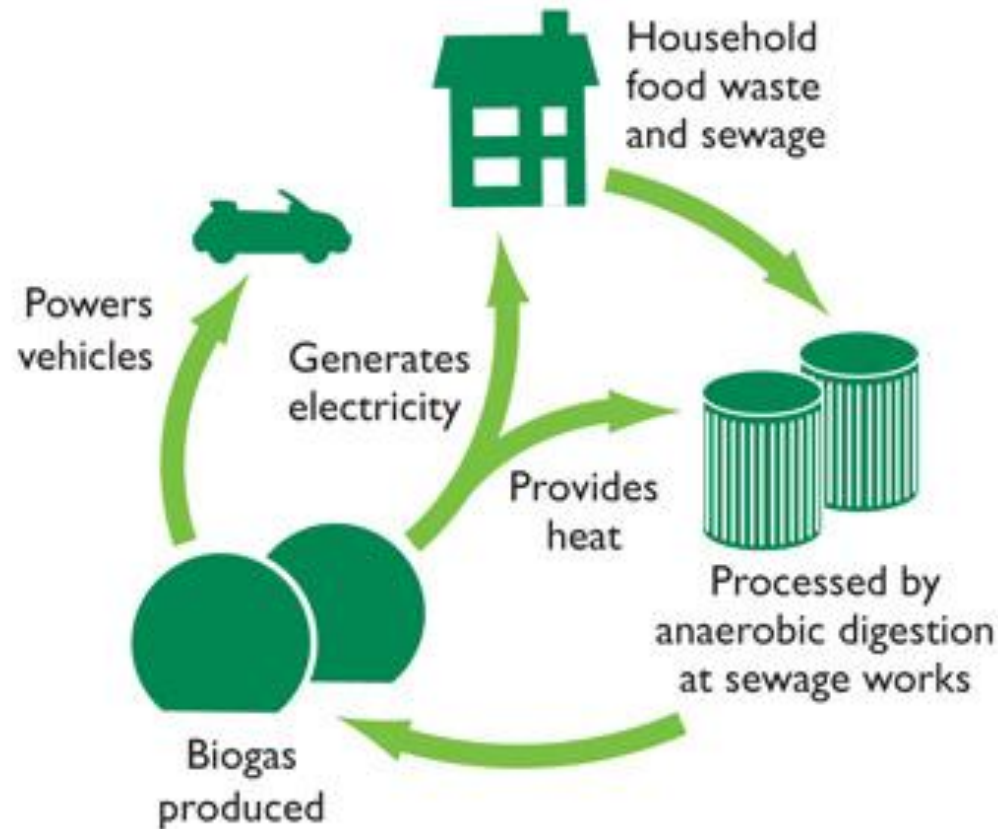
St. Cloud Wastewater Treatment

Energy Neutral – Energy Provider



St. Cloud Wastewater Treatment

Biogas Opportunities



➤ St. Cloud Wastewater Treatment

Carbon Footprint





A large, stylized blue wavy graphic that resembles a wave or a ribbon, positioned behind the central text.

QUESTIONS?